

BEFORE THE PUBLIC UTILITIES COMMISSION
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Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish Annual
Local and Flexible Procurement Obligations
for the 2019 and 2020 Compliance Years.

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**COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES
ON TRACK 1 PROPOSALS**

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I. INTRODUCTION

Pursuant to the Assigned Commissioner and Administrative Law Judge's Scoping Memo and Ruling (Ruling) issued on January 18, 2018, the Office of Ratepayer Advocates (ORA) submits these comments on the Track 1 proposals submitted by the California Public Utilities Commission's (CPUC) Energy Division and parties on February 16, 2018. Energy Division held a two day workshop on parties' proposals (RA workshop) on February 22-23, 2018. ORA offers the following comments to assist parties in the refinement and development of final proposals for possible adoption in the June 2018 Resource Adequacy (RA) Decision for implementation in 2019.

II. DISCUSSION

A. Clarifications for ORA's Proposal

ORA offers clarification of its proposal based on questions raised by parties during the RA workshop.

ORA's proposal requires the California Independent System Operator (CAISO) to provide studies to identify resources essential for reliability that would "determine the basis of the need for the resource, including whether it is capacity, voltage support, or some other need, and address how long the need will persist."¹ Parties at the workshop expressed concerns with how the proposed analysis would differ from CAISO's current Local Capacity Technical (LCT) study. The current LCT would provide a starting point for identifying reliability needs but it does not capture the information necessary to determine all the resources CAISO would backstop if not procured by a load-serving entity (LSE). For example, the Final 2018 LCT study did not establish a requirement for the Bogue sub-area.² However, CAISO's assessment of the Feather River Energy Center, located within the Bogue sub-area, found a need for the resource due to voltage issues in the area, resulting in a Reliability Must Run (RMR) contract.³ ORA's proposal seeks

¹ ORA Track 1 Proposals (ORA Proposals), February 16, 2018, pp. 4-5.

² CAISO 2018 Local Capacity Technical Analysis, May 1, 2017, p. 33.

³ CAISO Calpine Peakers Retirement Assessment Stakeholder Call, March 6, 2017, slide 5.

additional analysis to identify these essential resources before CAISO decides to enter into a backstop procurement contract with them. Furthermore, ORA is seeking information from CAISO on the resource characteristics and mix of alternative resources and transmission solutions that can address the reliability need and avoid backstop procurement.

Parties at the workshop also raised concerns regarding the scope of the analysis proposed by ORA. To narrow the scope for an initial assessment, CAISO could work with the CPUC to look at the term length of current contracts with all LSEs and determine when resources have contracts with terms that are expiring. Resources not currently under contract and those with contracts expiring in the next two years could be prioritized for analysis to determine if they are essential for reliability. Additionally, CAISO could strategically prioritize the analysis of resources in sub-areas to reveal potential contingencies. For example, CAISO could prioritize analyzing the impact of removing the largest natural gas resource in a sub-area. While this prioritization might not reveal every contingency that could arise from removal of other resources in the sub-area, it will provide initial information on the sub-area to begin discussion of potential solutions to contingencies in the area.

Questions also were raised on the timing for the analysis proposed by ORA. The issue of resource retirement and potential backstop procurement will be an ongoing one, so there is value in the analysis even if the analysis cannot be completed by the anticipated June 2018 CPUC decision in this proceeding. ORA proposes that CAISO submit this analysis into the proceeding as soon as it is available to begin informing future LSE procurement.

If CAISO is concerned with time and resource constraints to produce the analysis in a timely manner, the CPUC could direct the investor-owned utilities (IOUs) to conduct power flow analyses and coordinate with CAISO. The IOUs use power flow modeling when developing proposals for new transmission and/or generation resources in their

service territories.⁴ The IOUs may not have the necessary expertise to review the entire CAISO system, but they have power flow capability and expertise to identify essential resources and potential reliability needs in their own local areas and sub-areas. CAISO could help provide guidance and review to ensure that the IOUs capture the same reliability needs that CAISO would identify with its own modeling expertise. CAISO could use the IOUs' analysis as a starting point and conduct additional analysis to fill in any gaps from the IOU's analysis and provide guidance on how alternative resources could address the reliability need.

The IOU analysis would inform short-term and long-term procurement and would benefit all LSEs by reducing backstop procurement and ratepayer costs. Thus, the IOUs should establish memorandum accounts to record the costs of developing their analyses for future recovery through distribution rates.

At the workshop, Southern California Edison Company (SCE) raised the concern that once any essential resources are procured and costs spread to LSEs, resource owners would be able to determine their market power and utilize it going forward. SCE stated that this could lead to only one contract period where LSEs could contract for a resource without the resource owner's knowledge of their market position. While ORA's proposed process could reveal the importance of a resource, resource owners can already gain access to this information by notifying CAISO that they are considering retirement, as in the case of the recent RMRs. ORA's proposed process would enable LSEs to understand which resources are essential and provide an opportunity for LSEs to consider longer-term contracts with these resources before the resource owners determine their market power. Additionally, a resource owner with an essential resource might still be willing to offer multi-year bids at lower prices than the cost of backstop procurement to avoid contract uncertainty because CAISO can only contract with resources on a one year basis at a maximum through RMR and the Capacity Procurement Mechanism (CPM).

⁴ The IOUs perform power flow analysis when they seek a certificate of public convenience and necessity and/or a petition to construct transmission infrastructure in their service areas from the CPUC: PG&E (A.15-06-015); SCE (A.15-04-0130); and SDG&E (A.12-05-020).

ORA's proposal also seeks information to facilitate the development of new alternative resources and transmission solutions through this process, which would enhance competition among the pool of existing resource owners.

B. Additional Analysis and Coordination with IRP

Parties' proposals demonstrate that additional analysis is necessary to reduce backstop procurement. ORA's and San Diego Gas & Electric Company's (SDG&E) proposals call for additional analysis to better identify resources essential for reliability.⁵ Pacific Gas and Electric Company's (PG&E) proposal requires CAISO to conduct additional analysis to identify reliability needs so a central procuring agent could procure to meet identified needs.⁶ Simply procuring resources with multi-year contracts would not prevent backstop procurement without information on whether LSEs have procured the right resources to meet reliability needs. Thus, proposals for a centralized capacity market and multi-year RA would also require additional analysis to identify essential resources and reliability needs to avoid backstop procurement.

ORA also supports proposals for additional analysis to inform longer-term procurement planning. In particular, ORA supports both Energy Division's proposal for additional analysis from CAISO to assess critical generation resources necessary for long-term grid reliability⁷ and Sierra Club's proposal for "LSEs to engage with CAISO now to assess which plants in disadvantaged communities are necessary for reliability and whether preferred resource deployment can displace and retire highly polluting generation."⁸ Both sets of information would facilitate solutions to avoid backstop procurement and enable development of new resources to address reliability needs.

In the RA workshop, Energy Division staff raised the question of what information is needed to inform long-term resource procurement in the absence of a risk

⁵ ORA Proposals, p. 4; and SDG&E Track 1 Proposal (SDG&E Proposal), February 16, 2018, p. 4.

⁶ Track 1 Proposals Of Pacific Gas And Electric Company (PG&E Proposals), February 16, 2018, p. 7.

⁷ Current Trends in California's Resource Adequacy Program, Energy Division Working Draft Staff Proposal (ED Working Draft Proposal), February 16, 2018, p. 52.

⁸ Sierra Club Track 1 Proposal (Sierra Club Proposal), February 16, 2018, p. 4.

of retirement study. ORA recommends that the CPUC and CAISO analyze how grid needs change with higher levels of renewables penetration to understand what operational characteristics are necessary to facilitate renewables integration. This analysis could expand upon the analysis developed in the California Energy System for the 21st Century (CES-21) Flexibility Metrics and Standards Grid Integration project. The CES-21 project looked at operating flexibility to meet demand reliably for up to 50% RPS.⁹ ORA recommends that CAISO and the CPUC conduct additional analysis to determine how grid needs change with the CPUC's 2030 target of 42 million metric ton (MMT) of greenhouse gas (GHG).¹⁰

CAISO and the CPUC should also review grid needs on a local area and sub-area basis to determine potential contingencies in those areas and guide targeted procurement. Analysis should utilize CAISO's five year ahead LCT study and also address the ten year time frame to determine what resources are necessary in the transition to achieving California's GHG goals.

C. Procurement through a Centralized Capacity Market

ORA opposes proposals for adoption of a centralized capacity market (CCM) based on the following concerns, addressed in more detail below:¹¹

- i. Potential conflict between California's environmental goals and Federal Energy Regulatory Commission (FERC) requirements,
- ii. Potential increased ratepayer costs, and
- iii. Limitation of LSE discretion in procurement.

⁹ CES-21 Role of Operating Flexibility in Planning Studies Final Report, September 12, 2017, p. 4.

¹⁰ Decision (D.) 18-02-018, p. 3.

¹¹ RA Proposals of the Western Power Trading Forum (WPTF Proposals), February 16, 2018, pp. 3-4; Track 1 Proposals of the Alliance for Retail Energy Markets (AReM Proposals), February 16, 2018, pp. 5-6; and Track 1 RA Proposals of Middle River Power, LLC (MRP Proposals), February 16, 2018, pp. 4-6.

1. Potential Conflict between California’s Environmental Goals and FERC Requirements

Senate Bill 350 (SB 350) was adopted in 2015, establishing stringent clean energy, clean air, and pollution reduction goals.¹² SB 350 increases California’s renewable electricity procurement goal to 50 percent by 2030, requires the doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030, and supports attainment of the state’s goal to reduce GHG emissions. It also requires LSEs to develop Integrated Resource Plans (IRPs) to facilitate achievement of these goals. Parties’ proposals for CCMs fail to address how these goals can be reached with a CCM under FERC jurisdiction.

The Federal Power Act (FPA) gives the FERC authority over the prices of wholesale sales of electricity, and the obligation to ensure that wholesale prices are “just and reasonable” and that rates, terms, and conditions must be “not unduly discriminatory or preferential.”¹³ Capacity prices set by a CCM would be wholesale prices subject to review by FERC. Consistent with SB 350 and other regulations, the CPUC has adopted mandates for procurement of preferred resources including renewables, energy efficiency, and energy storage. Procurement through a CCM would be subject to FERC requirements and would not consider these policy goals. Thus, if the resources procured through a CCM do not achieve the states’ environmental goals, LSEs would need to over-procure to both meet RA requirements and the states’ goals, resulting in increased ratepayer costs. Moreover, California has adopted specific requirements designed to procure resources that do not overly burden disadvantaged communities, and it would be challenging to implement these requirements in a CCM.¹⁴

¹² SB 350, available at: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350.

¹³ Federal Power Act Section 205.

¹⁴ Public Utilities Code Section 454.52(a)(1)(H).

Additionally, it is not clear whether CCM structure can address FERC requirements and state energy mandates and incentives. The PJM Interconnection LLC (PJM) expects to file two proposals for market reform with FERC to address the impact of state policies on the procurement of preferred resources.¹⁵ PJM's concern raises questions regarding inherent conflicts between state energy policies and CCMs. Therefore, ORA recommends that the CPUC should not adopt proposals for a CCM.

2. Potential Increased Ratepayer Costs

Adopting a CCM could also lead to increased ratepayer costs compared to current bilateral contracting. As any other market, a CCM would clear where supply and demand intersects and determine the price and quantity of resources procured. Actual offers from suppliers would determine the actual supply curve. The demand curve could be a fixed capacity target based on planning reserve margins, as in the case of the Midcontinent Independent System Operator, Inc. (MISO).¹⁶ Or it could be a downward-sloping demand curve, as in the case of PJM, ISO New England Inc. (ISO-NE), and the New York Independent System Operator (NYISO).¹⁷ The demand curves for PJM, ISO-NE, and the NYISO are based on system reliability requirements and the net Cost of New Entry (CONE) which is the gross CONE for a reference resource, such as a combustion turbine, minus average energy and ancillary service revenues.¹⁸ In either case, all resources that clear in the market receive the market clearing price for capacity. Under this structure, the cost of all resources procured to meet RA requirements in California under a CCM would be based on the bid of the highest cost resource that clears the

¹⁵ "PJM board sends competing capacity market reforms to FERC," Bade, Gavin, February 16, 2018, available at <https://www.utilitydive.com/news/pjm-board-sends-competing-capacity-market-reforms-to-ferc/517318/>.

¹⁶ Byers, Conleigh, et al. (2018) "Capacity Market Design And Renewable Energy: Performance Incentives, Qualifying Capacity, And Demand Curves," The Electricity Journal, p. 69, available at www.sciencedirect.com/science/article/pii/S1040619017303330/pdf?md5=aff36bc85e76f496513a5ea2e78bf079&pid=1-s2.0-S1040619017303330-main.pdf.

¹⁷ Id.

¹⁸ Id.

market. This could lead to much higher capacity payments for the resources than the current process in California which allows LSEs to negotiate and contract with each resource bilaterally at prices below that of other resources.

Additionally, how the demand curve is established will determine where it intersects with the supply curve and the resulting clearing price. Basing a demand curve for procurement of RA resources on the net CONE could artificially inflate RA prices by conflating California's short-term RA procurement with longer-term development of new resources.

3. Limitations of LSE Discretion in Procurement

The Western Power Trading Forum (WPTF) and Middle River Power (MRP) propose a centralized capacity market that addresses system, local, and flexible RA requirements.¹⁹ This mechanism would require LSE procurement of resources simply based on cost without consideration of the state's policy goals. LSEs seeking to procure renewables instead of natural gas resources might be forced to procure resources they do not want. Additionally, LSEs might be forced to procure polluting resources in Environmental Justice (EJ) areas instead of other alternatives if they clear the market. If the CPUC adopts a CCM, it would likely lead to LSE procurement decisions that are inconsistent with SB 350 mandates.

D. Procurement through a Central Agent

PG&E proposes that a central procuring agent would procure resources to meet all local identified reliability needs.²⁰ At the workshop, PG&E explained that the central procuring agent could be CAISO or some other entity and the procurement could be done through a CCM or bilateral contracting. However, if CAISO is the central procuring agent, it may be required to conduct procurement through a CCM instead of bilateral

¹⁹ WPTF Proposals, p. 4.

²⁰ PG&E Proposals, p. 7.

contracting because CAISO falls under FERC jurisdiction. In this case, the concerns raised in Section C of ORA's comments would apply.

If the central procuring agent is some other entity that will conduct bilateral contracting, there are still concerns with how the central agent would coordinate with the LSEs. If the central agent only procures to address local RA requirements, and not system or flexible RA requirements, how much discretion will LSEs actually have to make their own procurement decisions? Additionally, how would the central agent take into account CPUC policy goals? For example, would the central agent consider each LSE's RPS position when determining which resources to procure so that an LSE would not have to over-procure to meet RPS requirements? These issues should be addressed to determine whether using a central agent to procure to meet all local RA requirements is feasible.

E. Multi-year RA Procurement Requirements

Several parties offered proposals for multi-year RA procurement requirements.²¹ As discussed in Section B, any requirement for multi-year RA would not address the issue of backstop procurement if there is no analysis to determine which resources are essential. Additionally, an increase in future LSE contracts would not necessarily result in new RA contracts for resources at risk of retirement.

Any broad multi-year procurement requirement could also run the risk of increased ratepayer costs. If the resources procured do not meet changing RA requirements and reliability needs that often occur on a year to year basis, LSEs would be forced to conduct additional short term procurement to meet reliability requirements. The CPUC should not adopt multi-year RA requirements without first ensuring that sufficient information exists to enable LSEs to contract with the right resources to minimize ratepayer costs.

²¹ ED Working Draft Proposal, February 16, 2018, p. 53; NRG Energy, Inc. Track 1 Proposals (NRG Proposal), February 16, 2018, p. 3; WPTF Proposals, p.3; AReM Proposals, p. 6; and Proposal Of The Independent Energy Producers Association For Multi-Year RA Framework (IEP Proposal), February 16, 2018, p. 6.

Requiring broad multi-year RA procurement requirements could also unduly limit LSE discretion over their own procurement decisions. Requiring the IOUs to conduct multi-year procurement at a time when load is declining will lead to additional procurement on behalf of emerging and growing community choice aggregators (CCAs) and direct access electric service providers (ESPs). The CCAs and ESPs would have less motivation to develop more of their own procurement on top of what the IOU allocates to them because it would only lead to increased costs.

F. Effective Load Carrying Capacity (ELCC)

1. Locational and Technological Factors

ORA supports the proposals of SCE and Southwestern Power Group (SWPG) to include locational and technological considerations in an ELCC methodology. SWPG recommends evaluating wind and solar ELCC across four regions of California as was introduced in the *Joint Update of PG&E, SCE, and SDG&E to ALJ's Ruling Accepting into the Record Revised Energy Division Staff Paper on the Use of ELCC for RPS Procurement and Setting Schedule* (Joint IOU Proposal).²² SCE describes that both locational and technological categories will provide a proper indication of solar and wind resources.²³

The Joint IOU Proposal includes approaches to determining the unique ELCC values for tracking and fixed solar technologies and geographic location.²⁴ However, the methodology used in the Joint IOU Proposal was intended to validate planning for the Renewable Portfolio Standard (RPS) proceeding and is not suitable for calculating qualifying capacity values for RA purposes. Additionally, the Joint IOU Proposal did not address concentrated solar power (CSP) or “solar thermal” technologies. ORA

²² Resource Adequacy Proposals to Track 1 of the Southwestern Power Group II, LLC (SWPG Proposals), February 16, 2018, p. 5. For the Joint IOU Proposal, see: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M192/K869/192869027.PDF>.

²³ Southern California Edison Company's Track 1 Proposals (SCE Proposals), February 16, 2018, p. 8.

²⁴ Joint IOU Proposal, Attachment 1, see <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M192/K869/192869027.PDF>.

recommends that SWPG and the Joint IOUs explain how the methodology used in the Joint IOU Proposal could be changed to develop RA values. ORA further recommends that CSP or solar thermal technologies should also be included in the RA ELCC methodology due to the unique operating characteristics of those resource and the significant quantities of those resources present in California's suite of solar resources.²⁵

Proper consideration of the reliability value and location of wind and solar technologies should provide greater granular accuracy of the reliability value of these resources within their local area. More accurate reliability values would, in turn, contribute to a better understanding of local reliability needs and the available capacity able to meet local area reliability needs. The map below shows that many solar and wind resources exist within local reliability sub-areas. Technological and locational factors would more accurately reflect the RA value of those resources and impact the need for backstop procurement. Furthermore, this would help inform future procurement of solar and wind resources and provide the opportunity for LSEs to target procurement of resources that provide the greatest value to ratepayers.

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²⁵ There is 1,243 MW of operational CSP/thermal solar generation in California and 184 MW in the NV Energy area. This technology includes the Ivanpah system and numerous parabolic trough resources located within California. See: https://www.nrel.gov/csp/solarpaces/by_country_detail.cfm/country=US.

Solar and Wind Resources and Local Reliability Sub-Areas²⁶



²⁶ Colored polygons are estimates of 2016 CAISO-designated local sub-areas (not aggregated local areas used for CPUC Local Capacity Requirements). Solar resources are yellow circles and wind are blue circles. Map built by ORA using Google My Maps, regional data allowed with permission from the California Energy Commission (<http://www.energy.ca.gov/maps/>) and power plant data allowed with permission from Synapse Energy Economics, Inc. (<http://www.synapse-energy.com/tools/interactive-map-us-power-plants>). Map is accessible here: https://drive.google.com/open?id=1_WKp2z8rzqBe7z2rD_R0l16Ls3Y1UyFc&usp=sharing.

These locational and technological categories should be implemented in Track 1, if timing allows, or adopted in Track 2.

2. Behind the Meter Assumptions

Many parties proposed that an adopted ELCC methodology should treat behind-the-meter photovoltaic solar (BTM PV) as a supply or demand-side resource rather than back BTM PV volume out of final ELCC calculations as is the case for currently adopted values.²⁷ The impacts and suitability of different treatments of BTM PV require further study and discussion at this time. ORA recommends that the CPUC request that parties address the potential advantages and disadvantages associated with different approaches to integrating BTM PV in ELCC calculations in Track 2 testimony and working groups to allow robust discussion before adoption of the best approach.

3. Marginal and Average Approaches to ELCC

SCE proposed that the CPUC adopt a marginal ELCC methodology.²⁸ According to SCE, after establishing ELCC values for existing resources, any new resources would attain a “marginal” ELCC RA value. The ELCC value would last either through the life of the resource or the term of its contract. This is opposed to an “average” approach, in which all resources would receive a new net qualifying capacity (NQC) RA value each time ELCC values are updated. The average approach facilitates straightforward adjustments to the reliability assumptions of all solar and wind resources as the composition of grid resources changes over time and any updates to the ELCC methodology are made, but provides no certainty to generators of the future RA value of their resources. ORA agrees that the CPUC must consider adopting either an average approach or marginal approach when adopting a general ELCC methodology, but

²⁷ PG&E Proposals, p. 9; SCE Proposals, p. 5; WPTF Proposals, p. 5; SWPG Proposals, p. 5; Track 1 Resource Adequacy Proposals of Calpine Corporation (Calpine Proposals), February 16, 2018, p. 5; and MRP Proposals, p. 7.

²⁸ SCE Proposals, pp. 6-9.

highlights concerns with both approaches that the CPUC should consider before adopting either approach.

The marginal approach would lock all existing resources into current or updated ELCC values. The following period of ELCC review²⁹ would distribute the sum of the marginal reliability value of all new resources/contracts between those resources/contracts. During development of the ELCC methodology, Energy Division has described how ELCC values of solar resources have diminishing returns as more solar capacity is added to the resource fleet.³⁰ Accordingly, the marginal value of new solar resources would be very small since older resources would lock in the value of all solar resources built prior to the new ones. The inverse would be true for wind resources, which have increasing returns of reliability as more wind is present on the system. Calpine Corporation (Calpine) and Energy and Environmental Economics, Inc. (E3) estimated the relatively small solar incremental value and large wind incremental values in a CPUC workshop last year.³¹ Although the marginal approach would accurately account for the reliability value of solar, the relative loss in value of new solar resources and contracts until old resources/contracts go offline or expire may unintentionally slow the growth of the California solar market. At the same time, a marginal approach could increase resource diversity as other renewables are procured in order to meet RPS requirements.

Under a marginal approach, the CPUC would also need to determine when the incremental NQC value of a resource should reset; either after the life of the resource ends or after the contract expires. Resetting the NQC value of a resource after a contract expires would allow for more rapid updates for marginal ELCC values for renewable

²⁹ Since no ELCC methodology is currently adopted, it is unclear how often ELCC would be updated, but will likely be on an annual or longer basis.

³⁰ See ELCC of Wind and Solar Resources in the CAISO Balancing Authority and Resetting the Reserve Margin for Resource Adequacy Obligations, March 25, 2016, pp. 13-14, available at: www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=10599.

³¹ Calpine/E3 ELCC Proposal, February 14, 2017, p. 10. See <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442452539>.

resources which could help account for a changing fleet of resources on the grid. It would also help solar and wind resources to account for other changes to ELCC methodologies in the coming decades. However, this approach does not address how to treat energy resources that do not rely on a contract, such as LSE-owned solar and wind.

Lastly, it is critical that a marginal approach not be adopted prior to adopting other critical ELCC refinements. The treatment of BTM PV and the adoption of locational and technological categories will have a significant impact on solar and wind resources as a whole and individually. If a marginal approach is adopted beforehand, the current fleet of solar and wind would lock in NQC values which do not accurately reflect the reliability of those resources, and the next increment of renewable resources would bear disproportionate RA values.

The average approach would be able to adjust to reflect future ELCC methodology refinements each time ELCC values as a whole are updated. However, further discussion is required to determine if this feature is worth the generator and planning uncertainty intrinsic to an average approach. ORA recommends further discussion through testimony and/or working groups to account for the above issues before adopting either approach.

G. Flexible RA

1. Wellhead Fast Flex RA

The Wellhead Electric Company (Wellhead) proposes a new capacity product called Fast Flex RA as a subset of current flexible RA products. ORA opposes this proposal. Wellhead's proposal does not demonstrate that the current flexible RA products designed by CAISO are deficient and does not demonstrate why this proposal is necessary. Wellhead proposes that 10% of an LSE's fleet be able to ramp to maximum output in 15 minutes and sustain operation for four hours twice a day.³² The proposal does not provide a study of the quantity required, nor does it indicate how many resources capable of meeting these requirements are currently on the grid. The product

³² Wellhead Electric Company Track 1 Proposal (Wellhead Proposal), February 16, 2018, pp. 2-3.

would be priced at a minimum of \$50/kW-year³³ which would increase ratepayer costs without a demonstrated commensurate reliability benefit. Any changes to flexible RA products should also be discussed in the context of CAISO's flexible resource adequacy criteria and must offer obligations (FRACMOO2) proposal which would change all flexible RA requirements. Wellhead does not address whether its proposal will provide any real benefits to ratepayers or address reliability needs beyond the changes proposed in FRACMOO2. Therefore, ORA recommends that the CPUC reject Wellhead's proposal.

2. Cogentrix Transitional Fast-Flexible RA

Cogentrix Energy Power Management (Cogentrix) proposes implementation of a fast-flexible RA product by 2019 until flexible RA products raised in CAISO's FRACMOO2 proposal are implemented.³⁴ ORA opposes this proposal.

Cogentrix's proposal uses CAISO studies as a foundation, but reaches significantly different conclusions than those in CAISO's current FRACMOO2 proposal. For example, CAISO has identified that quick-response products are necessary to address forecast uncertainty and estimates a need of 5,264 to 8,697 MW of fifteen and five minute products.³⁵ Cogentrix however believes the similarly designed fast-flexible RA need to be between 8,181 and 11,807 MW.³⁶ It is unclear why the need identified by Cogentrix is greater than the need identified in CAISO's FRACMOO2 proposal, and how this product serves as a transitional step between current requirements and any potential products adopted in FRACMOO2.

³³ Wellhead proposes an uncapped \$50/kw-yr floor as opposed to the average CPUC-jurisdictional capacity costs of \$37.20/kw-yr. See Wellhead Proposal, p. 4. See also Energy Division 2016 Resource Adequacy Report, June 2017, p. 23, Table 7.

³⁴ Proposal of Cogentrix Energy Power Management Transitional Fast Flexible RA Program (Cogentrix Proposal), February 16, 2018, p. 4.

³⁵ CAISO FRACMOO2 Revised Flexible Capacity Framework, p. 45. See <http://www.caiso.com/Documents/RevisedDraftFlexibleCapacityFrameworkProposal-FlexibleResourceAdequacyCriteria-MustOfferObligationPhase2.pdf>.

³⁶ Cogentrix Proposal, Exhibit A, p. 5.

Cogentrix asserts that Track 2 of this proceeding would allow for refinements, but it is premature to adopt the proposal in Track 1. At the workshop, CAISO noted that Cogentrix's proposal would require a modification to CAISO's tariff and raised concern that it may be difficult to change the tariff in time for implementation in Track 1. ORA also agrees with SCE that implementing a change to Flex RA now, just to change it once more if FRACMOO2 is implemented in 2020, may cause turmoil in the market and frustrate procurement planning efforts.³⁷ Therefore, ORA recommends that the CPUC reject Cogentrix's proposal.

H. Changes to RA Load Forecast and Planning Reserve Margin

A number of proposals suggest adjustments to the load forecast or Planning Reserve Margin (PRM).³⁸ ORA is concerned that changing current procedures such as the California Energy Commission's 1-in-2 load forecast standard or increasing PRM targets will lead to increased ratepayer costs and procurement of unnecessary capacity.

Calpine proposes to replace the current PRM calculation with a monthly PRM tied to new monthly reliability targets, using a monthly Loss of Load Expectation (LOLE) methodology.³⁹ Calpine uses past ELCC analyses conducted by Energy Division and itself to assert that the current PRM calculation does not meet a one-in-ten year LOLE standard.⁴⁰ Energy Division treated LOLE in a very particular manner to measure the value of solar and wind resources and to devise a unique monthly ELCC approach.⁴¹ This included removing operational resources from the model to artificially create LOLE

³⁷ As voiced by Eric Little of SCE at the February 23, 2018 Workshop.

³⁸ CAISO Resource Adequacy Proposals (CAISO Proposals), February 16, 2018, pp. 9-10; Calpine Proposals, pp. 1-5; and MRP Proposals, pp. 6-7.

³⁹ Calpine Proposals, p. 3.

⁴⁰ Calpine Proposals, p. 2.

⁴¹ Energy Division, Proposal for Creation of LOLE and Solar ELCC Values for 2018 RA Compliance Year, December 16, 2016, pp. 10-11, available at <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442451952>.

targets.⁴² In contrast, the current PRM was adopted based on past discussion of reasonable levels of reliability.⁴³ Significant discussion and analysis is required to determine whether to replace California's standards for reliability and whether the approach used by Energy Division for ELCC or another LOLE approach would be more appropriate. Calpine's estimation of 4.5 GW of increased need just for January concerns ORA, since that capacity would significantly raise ratepayer costs in a month which historically has few reliability contingencies.⁴⁴

CAISO proposes adopting a more conservative load forecast method for the shoulder months around summer due to a single emergency event experienced on May 3, 2017 with an unseasonable heatwave and exceptional amounts of generator planned and unplanned outages.⁴⁵ This was the first Stage 1 emergency since 2007 and there have been only three Stage 2 Emergencies (in which Operating Reserves deplete below 5%) since the 2000-2001 Energy Crisis.⁴⁶ CAISO has not yet demonstrated that there is a continuous threat to reliability in shoulder months. Stage-level emergencies are rare, and a single event over the course of a decade does not necessarily indicate a repeating problem so much as an exceptional incident. CAISO is in the process of conducting an analysis to identify months with variability and ORA recommends that this analysis include concrete historical examples of actual load exceeding forecasted load, and associated deficiencies to reliability.⁴⁷

⁴² Proposal for Monthly Loss of Load and Solar and Wind ELCC Values for 2018 Resource Adequacy Compliance Year, February 24, 2017 (ED's Final ELCC Proposal), pp. 9-10.

⁴³ The PRM was not developed using an LOLE approach, but it was found that a 15% PRM would cause 0.2 days in 10 years LOLE. See D.04-01-050, p. 24.

⁴⁴ Calpine Proposals, p. 5. Also, CAISO alert, warning, and emergencies have historically been relatively minimal in January; Since 2002, there have been two Transmission Emergencies, Alerts, Warnings, or Stage Emergencies in January, as compared to 27 in July and the monthly average of 6.5. See CAISO AWE Grid History Report: http://www.caiso.com/Documents/Alert_WarningandEmergenciesRecord.pdf.

⁴⁵ CAISO Proposals, p. 9.

⁴⁶ CAISO Alert Warning and Emergencies Grid History Report, December 27, 2017, pp. 1-2. See: http://www.caiso.com/Documents/Alert_WarningandEmergenciesRecord.pdf.

⁴⁷ CAISO Proposals, p. 10.

I. Capacity Procurement Mechanism Allocation for Departing Load

ORA supports PG&E's recommendation that the CPUC and CAISO coordinate to develop a method to allocate CPM costs to any LSE that may begin operation or expand into the affected local area during the term of the CPM designation.⁴⁸

Historically, CAISO has initiated CPM backstop measures to address a short-term (one to three months) reliability deficiency. However, three CPMs were designated in 2017 which will likely last for all of 2018. There is the possibility of new or expanding LSEs growing into the deficient area mid-year. Since CAISO allocates costs of the CPM based on the LSEs in place when the designation is made, it is imperative to adopt a new method to true up costs account for any load which departs the affected LSE. This would maintain cost indifference between bundled and unbundled customers. This effort could also be coordinated with CAISO's own Review of Reliability Must Run and CPM initiative which is exploring updates to the CPM and CAISO tariff to integrate solutions to recent challenges.⁴⁹ However, the CPUC should adopt a strategy to address this issue without waiting for the CAISO initiative to conclude as CAISO only plans to begin discussion of this issue after May 2018.⁵⁰

J. Availability Assessment Hours (AAH)

ORA supports proposals which seek to align CPUC RA measurement hours with CAISO availability assessment hours.⁵¹ A mismatch of assessment hours between the CPUC and CAISO causes a discrepancy between the hours the CPUC uses to determine

⁴⁸ PG&E Proposals, p. 4.

⁴⁹ See Issue Paper and Straw Proposal for Phase 1 Items, January 23, 2018, available at <http://www.caiso.com/Documents/IssuePaperandStrawProposal-ReviewReliabilityMustRunandCapacityProcurementMechanism.pdf>.

⁵⁰ Id., p. 6.

⁵¹ Staff Proposal on Alignment of CPUC RA Measurement Hours and CAISO Availability Assessment Hours, February 16, 2018, p. 1; PG&E Proposals, p. 6; SCE Proposals, p. 9; CAISO Proposals, p. 1; NRG Proposal, p. 5; and WPTF Proposals, p. 5

the RA value of a resource and when it is actually required to offer capacity in the CAISO markets.

ORA supports Energy Division's proposal for CAISO to submit its AAH into the RA proceeding in conjunction with its annual Flexible Capacity Requirements study.⁵² There will be a one year lag between determination of hours and implementation of the new hours for demand response resources simply due to the timing of analysis to determine the valuation of the following year's demand response resources.⁵³ This lag is unavoidable, but discussion at the RA workshop indicated that it is unlikely for hours to shift drastically in years ahead.

K. Slow Response and Use-Limited Resources

CAISO presented analysis on slow-response demand response, showing that different local regions will require resources to perform for different durations depending on the shape of demand and penetration of use-limited resources in the area.⁵⁴ CAISO seeks adoption of a methodology in Track 1 before conducting analysis in 2019 to establish maximum levels of resource adequacy use-limited capacity in local areas for 2020. However, it is not clear what methodology CAISO wants the CPUC to adopt.

CAISO has not specified how it would determine the maximum level of RA use-limited capacity in an area. Its analysis simply shows slow response resources at different penetration levels leading to different forecasts of necessary event durations.⁵⁵ CAISO states that the analysis applies equally to all use-limited resources, meaning greater penetration of use-limited resource will lead to more dispatch and for longer durations of those resources.⁵⁶ CAISO also states that adopting the methodology in

⁵² Staff Proposal on Alignment of CPUC RA Measurement Hours and CAISO Availability Assessment Hours, February 16, 2018, p. 1.

⁵³ Id.

⁵⁴ CAISO Proposal, pp. 14-15.

⁵⁵ CAISO Presentation For Local Capacity Use-Limited Resource Characteristics, February 23, 2018, slide 7.

⁵⁶ CAISO Proposal, p. 15.

Track 1 “allows for adequate opportunity to conduct appropriate procurement of needed technical and operational characteristics.”⁵⁷ However, CAISO’s proposal does not address how to establish limits on all use-limited resources or what changes it seeks for future procurement. CAISO should address the following questions in its reply comments:

- i. How will CAISO determine the maximum level of RA use-limited capacity in each local area and sub-area?
- ii. Is CAISO proposing a cap at existing levels of penetration or some other level?
- iii. How will it determine the appropriate penetration level based on load shape?
- iv. How does CAISO propose that the CPUC “incorporate any necessary changes to demand response programs, contracts for preferred resources that are use-limited, studies, and implementation requirements” before CAISO conducts analysis in 2019 for application in 2020? What changes does CAISO propose the CPUC adopt?
- v. How are current penetration levels of battery storage and use-limited thermal generators addressed in CAISO’s proposed methodology?
- vi. What changes does CAISO seek for future procurements regarding technical and operational characteristics of resources?

It is premature to adopt CAISO’s undefined methodology in Track 1 without information on the impact the new methodology will have on current use-limited resources and future procurement. This issue should be further addressed in Track 2 where CAISO can clearly define the methodology it seeks the CPUC to adopt, the impact of the proposal on current use-limited resources and the associated changes for future procurement.

⁵⁷ CAISO Presentation For Local Capacity Use-Limited Resource Characteristics, February 23, 2018, slide 11.

L. Transparency and Environmental Justice Information

ORA supports Sierra Club's proposals for greater transparency in LSE procurement.⁵⁸ Sierra Club is seeking non-confidential information on short-term and long-term capacity contracts as well as information on CalEnviro Screen scores for resources in RA solicitations.⁵⁹ A public, centralized source of information on LSE procurement will facilitate greater stakeholder engagement. This information is particularly essential for communities interested in developing alternatives to procurement of specific resources in local areas.

III. CONCLUSION

ORA respectfully submits these comments to assist in the development of final proposals for consideration in the June 2018 RA Decision.

Respectfully submitted,

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⁵⁸ Sierra Club Proposal, pp. 1-4.

⁵⁹ Id., pp. 2-3.